

II. REMARKS

Applicant gratefully acknowledges the Examiner's determination that claims 3 and 13 contain allowable subject matter (Office Action, dated August 9, 2005, at 5, lines 12-15).

Claims 2 and 3 have been canceled without prejudice. Claims 1, 5, 10 and 13 have been amended and new claims 14-18 have been added. Specifically, claim 1 has been amended to incorporate the subject matter of dependent claim 2. Claim 1 has also been amended to delete the phrase "such as a wristwatch." Thus, the scope of claim 1 is now similar to that of original claim 2, although broader.

Claim 5 has been amended to recite "wherein the column-wheel is formed of a ratchet wheel provided with teeth and columns made perpendicular to the ratchet wheel" as supported by original claim 3 and to improve clarity. Claim 10 has been amended to remove a character reference and to improve clarity.

New independent claim 14 corresponds to original claim 3 rewritten in independent form with the phrase "such as wristwatch" deleted. Thus, new claim 14 has a scope similar to that of original claim 3, although broader.

Claim 13 has been amended to depend upon new claim 14. New claims 15 and 16 depend upon claims 14 and 1, respectively, and recite "wherein the timepiece is a wristwatch" as supported by original claim 1.

New claim 17 depends upon claim 5 and recites subject matter supported by original claim 10 of the application. New claim 18 depends upon claim 1 and additionally recites "wherein the column-wheel is disposed to control movements of an alarm locking lever and a locking indicator lever" as supported on page 4, lines 21-24, of the specification as originally filed.

The present amendment adds no new matter to the application.

III. THE INVENTION

The present invention pertains broadly to a timepiece that includes an alarm mechanism for producing an alarm signal at a predetermined moment. In particular, in accordance with an apparatus embodiment of the present invention, a timepiece is provided that has the features recited by independent claim 1. In accordance with another apparatus embodiment of the invention, a timepiece having the features recited by independent claim 14 is provided. Various other apparatus embodiments in accordance with the present invention are recited by the dependent claims.

An advantage of the various embodiments, in accordance with the present invention, is that a timepiece is provided with a control device and a “column-wheel” that acts on the control device to activate the control device, which is a structure suitable for use in smaller timepieces, such as wrist watches.

IV. THE REJECTIONS

Claims 5-10 and 13 stand rejected under 35 U.S.C. § 112, second paragraph, as indefinite.

Claims 1, 2 and 4 stand rejected under 35 U.S.C. § 102(b) as anticipated by Thoenig (U.S. Patent 4,422,775, hereafter the “Thoenig Patent”). Claim 11 stands rejected under 35 U.S.C. § 103(a) as unpatentable over the Thoenig Patent in view of Baltsois (U.S. Patent 1,916,033, hereafter, the “Baltsois Patent”). Claim 12 stands rejected under 35 U.S.C. § 103(a) as unpatentable over the Thoenig Patent in view of Bickerton (U.S. Patent 1,483,768, hereafter, the “Bickerton Patent”).

In view of the present amendment, Applicant respectfully traverses the rejection and requests reconsideration of the claims of this application for the following reasons.

V. APPLICANT'S ARGUMENTS

In view of the present amendment, claims 1 and 4-16 are now in compliance with 35 U.S.C. § 112. Claims 13-15 are allowable for the reasons of record.

A. The Section 102 Rejection

Anticipation under 35 U.S.C. § 102 requires showing the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim. Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick, 221 U.S.P.Q. 481, 485 (Fed. Cir. 1984). In the present case, the Examiner has failed to establish a prima facie case of anticipation because the Thoenig Patent does not teach each and every element of the claimed invention, arranged as in the claims.

i. The Thoenig Patent

The Thoenig Patent teaches a “device for controlling the functions of a watch and for displaying the state of at least one of the controlled functions,” as shown in Figures 1, 2, 3 and 5, wherein an analogue display watch includes a control stem (2) that moves axially, and a pull-out piece (6) that is engaged by the control stem (2) and pivots about spindle (6a). A bore (6c) of the pull-out piece engages a pin (8a) of lever (8), which in turn is provided with pin (8b) that engages bore (10a) of pawl (10). An end (20a) of a return spring (20) acts on a surface (8d) of the lever (8) in a substantially opposite manner to the action of push-button (18), (col. 3, lines 15-27).

The Thoenig Patent also teaches, in Figure 1, that pawl (10) can engage a wheel (12) that is pivotally mounted about fixed arbor (12a) and that has six teeth (12b) for meshing with wheel (14) that has twelve teeth (col. 3, lines 48-52). The wheel (14) is fixed for rotation with disc (16) so that each action of the pawl (10) will produce a corresponding advance of

the indicator disc (16) corresponding to the sector associated with each word reference inscribed on the disc, (col. 3, lines 52-62).

However, the Thoenig Patent does not teach, or suggest, “wherein the control device is activated by means of a push-button that acts on the control device via a column-wheel” as recited in independent claim 1 in accordance with the present invention. The Thoenig Patent teaches that a wheel (12) engages pawl (10), and a person of ordinary skill in the art would recognize wheel (12) is a “ratchet wheel” (See WEBSTER’S NEW COLLEGIATE DICTIONARY 1977, at 957, attached herewith)(“**ratchet wheel** *n* : a toothed wheel held in position or turned by an engaging pawl”). On the other hand, a “column-wheel” is a specific type of “ratchet wheel” that includes columns for governing the functions of various levers (See ILLUSTRATED PROFESSIONAL DICTIONARY OF HOROLOGY 1961, at 191 and 193, attached herewith)(“**Column-wheel.** In chronographs, a ratchet-wheel...with...columns, governing the functions of various levers.”). The column-wheel of the present invention is a simple mechanism whose operation is reliable and which allows, due to the height of its columns, to simultaneously control multiple levers (e.g., the alarm locking lever and the locking indicator lever as described on page 4, lines 12-20 of the instant specification).

It is clear from Figure 1 of the reference that Thoenig’s wheel (12) is a “ratchet-wheel,” but not a “column-wheel” because wheel (12) engages only pawl (10) and wheel (16) and not any levers. Because the Thoenig Patent does not teach a “column-wheel” in accordance with the present invention, the reference also cannot teach, or suggest, “the column-wheel is formed of a ratchet wheel provided with teeth and columns made perpendicular to the ratchet wheel” as recited by claim 5; “the alarm locking lever includes...a beak, which can abut against a column of the column-wheel or be situated between two columns of the column-wheel” as recited by claim 5; “the locking indicator

member...includes a beak which can abut against a column of the column-wheel or be situated between two columns of the column-wheel” as recited by claims 10 and 17; and “wherein the column-wheel is disposed to control movements of an alarm locking lever and a locking indicator lever” as recited by claim 18.

As admitted by the Examiner, the Thoenig Patent also does not teach, or suggest, “the alarm generator is formed by a hammer able to strike a gong” as recited in claim 11 and “the alarm generator generates a silent alarm” as recited in claim 12 (Office Action, dated August 9, 2005, at 4, lines 11-12, and at 5, line 4).

ii. The Baltsois Patent

The Baltsois Patent teaches an “alarm device for clocks” that includes a verge (29) that, when released, will cause an alarm to be sounded for a predetermined time period (See Figures 1, 2 and 8; and page 2, col. 2, lines 88-94). The Baltsois Patent does not teach, or suggest, a “column-wheel” as recited in independent claim 1 of the present invention.

iii. The Bickerton Patent

The Bickerton Patent teaches a “silent alarm wrist watch” that includes a plunger (17) that is pricked into a person’s wrist while her or she is wearing the wrist watch (See Figures 1 and 2, page 1, col. 2, lines 74-87). However, the Bickerton Patent does not teach, or suggest, a “column-wheel” as recited in independent claim 1 of the present invention.

iv. Summary of the References

Neither the Thoenig Patent, the Baltsois Patent, nor the Bickerton Patent teach, or suggest, alone or in combination, a timepiece device including a “column-wheel” in accordance with claim 1 of the present invention. Therefore, the scope and content of the

teachings of these references is insufficient to establish either a prima facie case of anticipation or a prima facie case of obviousness.

VI. CONCLUSION

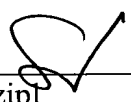
In view of the present amendment, claims 1 and 4-18 are in compliance with 35 U.S.C. § 112. Claims 13-15 are allowable for the reasons of record. Independent claim 1 is allowable over the teachings of the Thoenig Patent, the Baltsois Patent and the Bickerton Patent because none of these references teach a “column-wheel” in accordance with the present invention.

For all of the above reasons, claims 1 and 4-18 are in condition for allowance and a prompt notice of allowance is earnestly solicited.

Questions are welcomed by the below-signed attorney for applicant.

Respectfully submitted,

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tion ~ vt: to cause

fr. ON *rannsa*, fr. k] 1 a: to search fully 2: to search n-sack-er n
OF *rançon*, fr. L *rancon* 1: a considerable person 2

penalty 2: to free c *syn* see RESCUE

to talk in a noisy, vehemently ~ vt n — rant-er n

ch b: bombastic good time *syn* see

he tongue of cattle, the tongue by

-li ~-li, -le [NL, *ana* frog]: any of of dicotyledonous lously lobed leaves is sepals and five

knock 2: a sharp ility for or adverse arge c: a prison

h a sharp blow 2 to be or come by: sharply 5 *slang* arge ~ vt 1: to sharp sound ation fr. *rap*] 1

degree (as of care 1 ~> TALK, CONVERSA.

frankly <a center h people ... with t>

r. *rapere* to seize] age of unscrupu- *Lit. Supp.* > 2 a-pa-cious-ly adv

g rapacious pe: akin to OHG *ra* (napus) of the and hogs and for d ~e] 1 a *archaic* : to commit rape

oiling or carrying with a woman by or deception — ercourse by force : an outrageous

ed from rapeseed nant, and food

ant *aphaël*, fr. Heb febrew tradition *captein* to sew — wo lateral halves nally a ridge or us ovary that is ns a ridge along latom's valve Malagasy *rafia*

-déz\ [F & NL; *haphides*, pl. of e needle-shaped : metabolic bys

rapid, fr. *rapere* : marked by a ice *syn* see FAST -ness n and the surface but sing. or pl.

tent of the eyes pted for firing, liveliness, or

of being rapid by subway] in

raight 2-edged

rapier

rapine \ˈrā-pīn, -in\ n [ME *rapyne*, fr. L *rapina*, fr. *rapere* to seize, rob] 1: PILLAGE, PLUNDER
rap-ree \ˈrā-pē-ree\ n [IrGael *rápaire*] 1: an Irish irregular soldier or bandit 2: VAGABOND, PLUNDERER
rap-pee \ˈrā-pā\ n [F (*tabac*) *rapé*, lit., grated tobacco]: a pungent snuff made from dark rank tobacco leaves
rap-pel \ˈrā-pel, -rā\ n [F, lit., recall, fr. OF *rapel*, fr. *rapeler* to recall, fr. *re-* + *apeler* to appeal, call — more at APPEAL]: descent (as of a cliff) by means of a rope passed under one thigh, across the body, and over the opposite shoulder — *rap-pel* vt
rap-pen \ˈrā-pən\ n, pl *rap-pen* [G, lit., raven; akin to OHG *hraban* raven — more at RAVEN]: the centime of Switzerland
rap-per \ˈrā-pər\ n: one that raps or is used for rapping; *specif* : a door knocker
rap-pi-ni \ˈrā-pē-nē\ n pl [It *rapini*, pl. of *rapino*, dim. of *rapo* turnip, fr. L *rapum* — more at RAPE]: immature turnip plants for use as greens
rap-port \ˈrā-pō(r), -pō(r)\ n [F, fr. *rapporter* to bring back, refer, fr. OF *rapporter* to bring back, fr. *re-* + *aporter* to bring, fr. L *apportare*, fr. *ad-* + *portare* to carry — more at FARE]: RELATION; *esp* : relation marked by harmony, conformity, accord, or affinity
rap-por-teur \ˈrā-pōr-tər, -pōr-\ n [F, fr. *rapporter* to bring back, report]: one that gives reports (as at a meeting of a learned society)
rap-proche-ment \ˈrā-p-rōsh-mā, -rōsh-, -rā-prōsh-\ n [F, fr. *rapprocher* to bring together, fr. MF, fr. *re-* + *approcher* to approach, fr. OF *aprochier*]: establishment or state of cordial relations
rap-sca-li-on \ˈrā-skāl-yən\ n [alter. of earlier *rascallion*, fr. *rascall*]: RASCAL, NEER-DO-WELL
rap-t \ˈrāpt\ adj [ME, fr. L *raptus*, pp. of *rapere* to seize — more at RAPID] 1: lifted up and carried away 2: transported with emotion 3: wholly absorbed 4: ENROUSED — **rap-tly** \ˈrāpt-ē\ adv — **rap-t-ness** \ˈrāpt-nəs\ n
rap-tor \ˈrāp-tər, -tō(r)\ n [deriv. of L *raptor* plunderer, fr. *raptus*]: a bird of prey
rap-to-ri-al \ˈrā-tōr-ē-əl, -tōr-\ adj 1: PREDACEOUS 2: adapted to seize prey 3: of, relating to, or being a bird of prey
rap-ture \ˈrāp-čər\ n [L *raptus*] 1 a: a state or experience of being carried away by overwhelming emotion b: a mystical experience in which the spirit is exalted to a knowledge of divine things 2: an expression or manifestation of ecstasy or passion *syn* see ECSTASY — **rap-tur-ous** \ˈrāp-čə-rəs, -trəp-šrəs\ adj — **rap-tur-ous-ly** adv — **rap-tur-ous-ness** n
rapture vt *rap-tured*; *rap-tur-ing*: ENRAPTURE
rapture of the deep: NITROGEN NARCOSIS
ra-ra avis \ˈrā-rā-avis, -rər-, -rār-ā-avis\ n, pl *ra-ra avis-es* \ˈrā-rā-avis, -rər- or *ra-ra aves* \ˈrār-ā-avis\ [L, rare bird]: a rare person or thing; RARITY
rare \ˈrār\ adj *rar-er*; *rar-est* [alter. of earlier *rere*, fr. ME, fr. OE *hrere* boiled lightly; akin to OE *hreran* to stier, OHG *hruren*]: cooked so that the inside is still red <~ roast beef>
rare adj; *rar-er*; *rar-est* [ME, fr. L *rarus*] 1: marked by wide separation of component particles: THIN <~ air> 2 a: marked by unusual quality, merit, or appeal: DISTINCTIVE b: superlative or extreme of its kind 3: seldom occurring or found: UNCOMMON *syn* see CHOICE, INFREQUENT — **rare-ness** n
rare-bit \ˈrār-bīt, -tē(r)-\ n [(Welsh) *rarebit*]: WELSH RABBIT
rare earth n 1: any of a group of similar oxides of metals or a mixture of such oxides occurring together in widely distributed but relatively scarce minerals 2: RARE EARTH ELEMENT
rare earth element n: any of a series of metallic elements of which the oxides are classed as rare earths and which include the elements with atomic numbers 58 through 71, usu. lanthanum, and sometimes yttrium and scandium — called also *rare earth metal*; compare ELEMENT table
rare-show \ˈrār-ē-shō, -rər-\ n [alter. of *rare show*] 1: PEEP SHOW 2: SHOW, SPECTACLE; *specif* : a cheap street show
rar-efac-tion \ˈrār-ē-fāk-shən, -rər-\ n [F or ML; F *raréfaction*, fr. ML *raréfaction*, *raréfactio*, fr. L *raréfactus*, pp. of *raréfacere* to rarefy] 1: the action or process of rarefying 2: the quality or state of being rarefied 3: a state or region of minimum pressure in a medium transversed by compression waves (as sound waves) — **rar-efac-tion-al** \-shən-, -shən-\ adj — **rar-efac-tive** \-fāk-tiv\ adj
rar-efied also *rar-i-fied* \ˈrār-ē-fīd, -rər-\ adj 1: of, relating to, or interesting to a select group: ESOTERIC 2: very high
rar-efy also *rar-i-fy* \ˈrār-ē-fī\ v *rar-efied*; *rar-efy-ing* [ME *rariefien*, fr. MF *rariefier*, modif. of L *raréfacere*, fr. *rarus* rare + *facere* to make — more at DO] vt 1: to make rare, thin, porous, or less dense: to expand without the addition of matter 2: to make more spiritual, refined, or abstruse ~ vt: to become less dense
rare-ly \ˈrār-ē-lē, -rər-\ adv 1: not often: SELDOM 2: with rare skill: EXCELLENTLY 3: in an extreme or exceptional manner
rare-ripe \ˈrār-ē-rīp, -rər-\ adj [E dial. *rare* (early) + E *ripe*]: ripe before others or earlier than usual
rar-er-ripe n 1: an early ripening fruit or vegetable 2 *dial* : GREEN ONION
rar-ing \ˈrār-ē-an, -rər-, -in\ adj [fr. prp. of E dial. *rare* to rear, alter. of E *rear*]: full of enthusiasm or eagerness
rar-ty \ˈrār-ē-tē, -rər-\ n, pl *ties* 1: the quality, state, or fact of being rare 2: one that is rare
ras-bo-ra \ˈrāz-bōr-ə, -bōr-\ n [NL, genus name, fr. native name in the East Indies]: any of a genus (*Rasbora*) of tiny brilliantly colored cyprinid freshwater fishes often kept in tropical aquariums

ras-cal \ˈras-kəl\ n [ME *rascaile* rabble, one of the rabble] 1: a mean, unprincipled, or dishonest person 2: a mischievous person or animal

rascal adj: of, forming, or befitting the rabble: LOW
ras-cal-ity \ˈra-skāl-ē-tē\ n, pl *-ties* 1: RABBLE 2 a: the character or actions of a rascal: KNAVERY b: a rascally act
ras-cal-ly \ˈras-kāl-ē\ adj: of or characteristic of a rascal — **ras-cal-ly** adv

rase \ˈrāz\ vt *rased*; *ras-ing* [ME *rasen*, fr. MF *raser*, fr. (assumed) VL *rasare*, fr. L *rasus*, pp. of *radere* to scrape, shave] 1: ERASE 2: RAZE

rash \ˈrāsh\ adj [ME (northern dial.) *rasch* quick; akin to OHG *rasch* fast] 1: marked by or proceeding from undue haste or lack of deliberation or caution 2 *obs* : quickly effective *syn* see ADVENTUROUS *ant* calculating — **rash-ly** adv — **rash-ness** n

rash adv, *archaic*: in a rash manner
rash n [obs. F *rache* scurf, fr. (assumed) VL *rasica*, fr. *rasicare* to scratch, fr. L *rasus*, pp. of *radere*] 1: an eruption on the body 2: a large number of instances in a short period

rash-er \ˈrāsh-ər\ n [perh. fr. obs. *rash* to cut, fr. ME *raschen*]: a thin slice of bacon or ham broiled or fried; also: a portion consisting of several such slices

ra-so-ri-al \ˈrā-zōr-ē-əl, -sōr-, -zōr-\ adj [deriv. of LL *rasor* scraper, fr. L *rasus*] 1: habitually scratching the ground in search of food <~ birds> 2: GALLINACEOUS

rasp \ˈrāsp\ vt [ME *raspen*, fr. (assumed) MF *rasper*, of Gmc origin; akin to OHG *raspōn* to scrape together] vt 1: to rub with something rough; *specif* : to abrade with a rasp 2: to grate upon: IRRITATE 3: to utter in an irritated tone ~ vt 1: SCRAPE 2: to produce a grating sound — **rasp-er** n — **rasp-ing-ly** \ˈrāsp-ŋg-lē\ adv

rasp n 1: a coarse file with cutting points instead of lines 2: something used for rasping 3 a: an act of rasping b: a rasping sound, sensation, or effect

rasp-ber-ry \ˈrāz-bər-ē, -b(ə)-rē\ n [E dial. *rasp* (raspberry) + E *berry*] 1 a: any of various usu. black or red edible berries that are aggregate fruits consisting of numerous small drupes on a fleshy receptacle and that are usu. rounder and smaller than the closely related blackberries b: a plant (genus *Rubus*) that bears raspberries 2: a sound of contempt made by protruding the tongue between the lips and expelling air forcibly to produce a vibration
raspy \ˈrāsp-ē\ adj 1: HARSH, GRATING 2: IRRITABLE

ras-ter \ˈrās-tər\ n [G, fr. L *rastra*, *rastrum* rake, fr. *radere* to scrape]: the area on which the image is reproduced in a kinescope
ra-sure \ˈrā-shər, -zhər\ n [MF, fr. L *rasura*, fr. *rasus*, pp. of *radere*]: ERASURE, OBLITERATION

rat \ˈrāt\ n [ME, fr. OE *ræt*; akin to OHG *ratta* rat, L *rodere* to gnaw, *radere* to scrape, shave] 1 a: any of numerous rodents (*Rattus* and related genera) differing from the related mice by considerably larger size and by structural details (as of the teeth) b: any of various similar rodents 2: a contemptible person: a scab 3 b: one who betrays or deserts his party, friends, or associates b: SCAB 3b c: INFORMER 2 3: a pad over which a woman's hair is arranged — **rat-like** \-līk\ adj

rat vt *rat-ted*; *rat-ting* vt 1: to betray, desert, or inform on one's associates — usu. used with on 2: to catch or hunt rats 3: to work as a scab ~ vt: to give (hair) the effect of greater quantity by use of a rat — **rat on**: to go back on (as an agreement or statement): welsch on <*cratted* on her debts — Ellery Sedgwick>
rat-able or **rate-able** \ˈrāt-ə-bəl, -tē-\ adj: capable of being rated, estimated, or apportioned — **rat-ably** \-blē\ adv
rat-a-fia \ˈrāt-ə-fē-ə\ n [F] 1: a liqueur flavored with fruit kernels and bitter almonds 2: a sweet biscuit made of almond paste

rat-a-plan \ˈrāt-ə-plan\ n [F, of imit. origin]: the iterative sound of beating <a rolling ~ of drums — *Time*

rat-a-tat \ˈrāt-ə-tat\ or **rat-a-tat-tat** \ˈrāt-ə-tat(t)-tat\ n [imit.]: a sharp repeated knocking, tapping, or cracking sound

rat-bite fever n: either of two febrile bacterial diseases of man usu. transmitted by the bite of a rat

ratch \ˈrāch\ n [G *ratsche*, fr. *ratschen* to rattle, fr. MHG *ratzen*; akin to MHG *razeln* to rattle] 1: RATCHET 2: 2: a notched bar with which a pawl or detent works to prevent reversal of motion
rat cheese n: CHEDDAR

ratch-et \ˈrāch-ət\ n [alter. of earlier *rochet*, fr. F, alter. of MF *roquet* lance head, of Gmc origin; akin to OHG *rocka* distaff — more at ROCK] 1: a mechanism that consists of a bar or wheel having inclined teeth into which a pawl drops so that motion can be imparted to the wheel or bar, governed, or prevented and that is used in a hand tool (as a brace or screwdriver) to allow effective motion in one direction only 2: a pawl or detent for holding or propelling a ratchet wheel

ratchet wheel n: a toothed wheel held in position or turned by an engaging pawl

rate \ˈrāt\ vt *rat-ed*; *rat-ing* [ME *raten*] vt 1: to rebuke angrily or violently 2 *obs* : to drive away by scolding ~ vt: to voice angry reprimands

rate n [ME, fr. MF, fr. ML *rata*, fr. L (*pro*) *rata* (partē) according to a fixed proportion] 1 a: reckoned value: VALUATION b *obs* : ESTIMATION 2 *obs* : a fixed quantity 3 a: a fixed ratio between two things b: a charge, payment, or price fixed according to a ratio; scale, or standard: as (1) a charge per unit of a public-service commodity (2) a charge per unit of freight or passenger service (3) a unit charge or ratio used by a government for assessing property taxes (4) *Brit* : a local tax 4 a: a quantity, amount, or degree of something measured per unit of

about kitten or further a back a bake a cot, cart
out ch chin e less e easy g gift i trip i life
j joke g sing o flow o flaw o coin th thin th this
ü loot a foot y yet yū few yū furious zh vision

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La Chaux-de-Fonds, July 1961.

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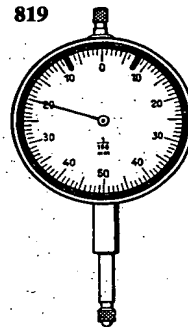
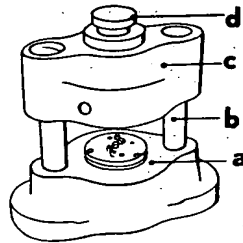
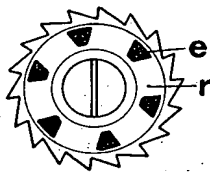
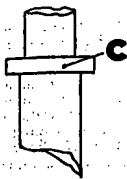
La Chaux-de-Fonds, Julio de 1961.

799

804 A

804 B

819



Magnets are made of special alloys that have a high coercive force (v. hysteresis 2208).

781 HEART-PIECE n. Heart-shaped cam, e. g. that fixed to the arbor of the chronograph-hand and often referred to as a *chronograph-heart*.

Carrier (v. carrier 1609).

782 LONG CASE n. Cabinet of a floor-clock.

783 COHERER n., or Branly detector (v. Branly detector 1290).

784 CORNER n. Angle formed by the meeting of two surfaces. The corner of a bench. Three-cornered file. It is more correct to say a triangular or three-square file.

785 JAM v. To wedge, block. In an escapement, the fork-opening should not be too narrow, or it may jam the impulse-pin.

786 COINCIDENCE n. Superposition of two things, or simultaneous occurrence of two phenomena. If there are two clocks, one making 60 vibrations per minute and the other 61, a coincidence occurs at a given moment, i. e. two vibrations will come at exactly the same time. This phenomenon is used in various instruments for determining the time in fractions of a second. *Coincidence clock. Coincidence instruments are acoustical or optical verniers.*

787 COINCIDE v. To occur at the same time.

788 NECK n. Narrower part of an object. d is the neck of the pendant c.

789 COLCOTHAR n. or rouge, compound of iron and oxygen, used for polishing.

790 SNAIL n. Part in the form of a spiral.

Index-snail (regulator-snail) or index-cam (regulator-cam), cam in the form of a spiral which governs the movements of the index (v. index-cam, regulator-cam 551). In complicated watches, cam for striking the hours or minutes. *Hour-snail, quarter-snail, minute-snail.*

791 SNAILING n. Act and result of snailing: The snailing of various parts of the surface of a dial.

792 SNAILED adj. Finished with a spiral pattern.

particularmente apreciada en un imán permanente. Los imanes se fabrican con aleaciones especiales de gran fuerza coercitiva (v. histéresis 2208).

CORAZÓN m. Leva, guía o cama en forma de corazón, por ejemplo la que está sujeta al eje de la aguja de un cronógrafo. Se dice corrientemente: un corazón de cronógrafo.

Corazón de arrastre (v. arrastrador 1609).

«COFFRE» n. m. fr. Caja de un reloj de antesala.

COHESOR m. Sinónimo de detector de Branly (v. esta palabra 1290).

ESQUINA f. Angulo exterior formado por dos superficies adyacentes. La esquina de un banco de artesano. Los relojeros franceses llaman generalmente a la lima triangular lima de tres esquinas.

ACUÑAR v. Sujetar con cuñas. El francés *coincer* significa también bloquear. En un escape, una entrada de horquilla estrecha puede «coincer» la clavija de platillo.

COINCIDENCIA f. Estado de dos cosas que se superponen, de dos fenómenos que ocurren simultáneamente. Si un péndulo efectúa 60 alternancias por minuto y otro 61 en el mismo tiempo, se produce en cierto momento una coincidencia, una superposición exacta de dos alternancias. Este fenómeno es la base de varios aparatos que permiten determinar el tiempo hasta fracciones de segundo. *Reloj de coincidencia. Los aparatos de coincidencia son nonios acústicos u ópticos.*

COINCIDIR v. Efectuarse, llegar, simultáneamente.

CUELLO m. Parte estrecha de un objeto. d es el cuello.

COLCÓTAR (rojo de Inglaterra o de París) m. Sesquióxido de hierro que se usa para pulir.

CARACOL m. Pieza en forma de espiral.

El caracol de raqueta o guía de raqueta es una cama en forma de espiral que acciona la raqueta (v. cama 551). En los relojes llamados «complicados», es una cama para el toque de las horas o de los minutos. Por analogía con el francés, muchos relojeros españoles han sustituido el neologismo *limazón*: el limazón de horas, de cuartos, de minutos.

«ACARACOLADO» m. Acción y resultado de «acaracolar». En las esferas se efectúa el «acaracolar» de distintas partes de la superficie.

«ACARACOLADO» adj. fr. Dícese de una decoración en forma de espiras.

iges Verzieren oder Schleifen
Zifferblattes oder eines
e Schleifscheibe wird so
inien entstehen.

verwendetes gallertartiges
Fischleim, Tafelleim, flüssi-

mier, isolierter drehender
bürste b schleift. Mit dieser
e elektrische Verbindung
henden Organ b und einem
hergestellt. Der Kollektor
n Elementen c und d oder
nten e bestehen.

n. Adhäsion zwischen zwei
dickte Öle können ein
ken.

f befestigen. Die Uhrensteine
ie Steine für verschiedene
en, Bohren, Polieren usw. auf
splatten.

n. Um eine Welle oder ein
gebrachter kleiner Ring.

Zylindrischer Teil c eines
flansch oder Bund an einer

inem astronomischen Fern-
tung, die dessen Verstellung
ichtung gestattet.

idartig. In der Heilkunde ver-
ber, Eisen, Jod in kolloidalem
cher verwenden kolloidale
n der Zugfedern.

roskopisch kleinen Teilchen
cher oder organischer Stoff
gen ergibt: Kautschuk, Gutta-
stnd Kolloide. Vielseitige
oide, z. B. als Galalith zur
n und Schildpatt, als Leim,
usw.

UM n. Symbol Nb. spezi-
smelzpunkt 2500° C. Stahl-
ure, Salpetersäure, Königs-
es Metall; es wird nur durch
lsäure angegriffen: das Niob-
eil gewisser Legierungen für
Spirale.

von länglicher Form, von
aber kreisförmigem Quer-

onographen, Schaltrad r mit
ne stehenden 6 dreieckigen
zur Steuerung der Funktionen
bel.

block m. Bei den Stanz- und
ock mit zwei zylindrischen
den Kopf c, der den Stempel

ckener Rückstand der Terpen-
ur besseren Haftung zwischen
scheibe verwendet wird.

farbe gibt. Das Chromoxyd ist
ins.

des Färbens. Ergebnis dieses
sttemperatur des Stahles wird
rheitzten Stückes beurteilt.

793 SNAIL v. To finish or grind the surface of a metal dial or washer by turning it under a grindstone in such a way that a series of spiral scratches are obtained.

794 GLUE n. Gelatinous substance used for sticking (usually called cement by watchmakers). Strong glue, fish glue, glue in sheet or liquid form.

795 COLLECTOR n. Person or thing that collects. In electrical engineering, an insulated rotating ring a against which a brush b rubs. This device enables an electric connection to be made between a fixed part b and a moving part a. The collector may be formed of two separate elements c and d or of a series of elements e.

796 STICKING, BINDING n. Adherence between two objects. Oils that have thickened may cause sticking, or binding.

797 GLUE v. To fix with glue (the term usually used by watchmakers is to cement). Jewels may be glued, or cemented, to wax-chucks or plates for various operations (drilling, polishing, etc.).

798 COLLAR n. Small ring surrounding an arbor or a cylindrical tube.

799 FLANGE, COLLAR n. Part c of an object, in the form of a cylindrical ring. To turn a flange, or collar, on an arbor or spindle.

800 COLLIMATOR n. In an astronomical telescope, the device enabling the instrument to be pointed in a given direction, for correct sighting.

801 COLLOIDAL adj. Having the nature of a colloid. In medicine, gold, silver, iron, iodine, etc., are used in the colloidal state. Colloidal graphite is used by certain watchmakers for greasing springs.

802 COLLOID n. Mineral or organic matter composed of microscopic particles, giving solutions of a jelly-like consistency: rubber, gutta-percha, gelatine, etc., are colloids. Colloids have many applications, e.g. galalith, used in making imitation horn or tortoiseshell, glues, synthetic resins, linoleum, etc.

803 COLUMBIUM n. Synonym of niobium. Symbol Nb; specific gravity 7; melting-point ~ 2500° C. Steel-grey metal which is impervious to hydrochloric acid, nitric acid and aqua regia, though it is attacked by concentrated sulphuric acid. Columbium is a constituent of certain alloys used in making compensating balance-springs.

804 COLUMN, PILLAR n. Elongated part of any section, though usually cylindrical.

804 A Column-wheel. In chronographs, a ratchet-wheel r with 6 triangular contrate teeth or columns e, governing the functions of various levers.

804 B Pillar die-set. In punching- and stamping-presses, a block supporting two cylindrical columns b, which guide the head c bearing the punch.

805 COLOPHONY, ROSIN n. Dry residue of the distillation of turpentine, used to increase the adherence between driving-belts and pulleys.

806 COLORANT n. Colouring matter. Chromium oxide is the colorant present in ruby.

807 COLORATION, COLOURING (U. S. A. coloring) n. Act or result of colouring. The temperature at which steel is tempered is estimated according to the colouring of the heated metal.

ACARACOLAR (fr. colimaçonner) v. Decorar la superficie de una esfera o de una rodela metálica, o pulirla haciéndola girar contra una muela especialmente orientada, con objeto de obtener rayas en forma de espiras.

COLA f. Pasta gelatinosa y pegajosa que se usa para pegar. Cola fuerte, cola de pescado, cola en placa o líquida.

COLECTOR m. Que recoge, veolecta. En electricidad designa un anillo giratorio a sobre el cual frota la escobilla b. Esta disposición permite establecer un contacto eléctrico entre un órgano fijo b y un órgano móvil a. El colector puede constar de dos elementos aislados c y d o también de una serie de elementos e.

ENCOLAMIENTO m. Adherencia entre dos objetos. Los aceites espesos pueden provocar el encolamiento.

ENCOLAR v. Pegar con goma o cola. Los fabricantes de piedras para relojes las encolan en tases o placas para diversas operaciones: agrandado, taladrado, pulido, etc.

COLLARETE m. Pequeño anillo cercando una tija o un tubo cilíndricos.

COLLAR m. Parte c de una pieza en forma de anillo cilíndrico.

COLIMADOR m. En un anteojo astronómico, dispositivo que permite desplazarlo en una dirección determinada.

COLOIDAL adj. Perteneciente o relativo a los coloides. En medicina, se usan el oro, la plata, el hierro, el yodo en estado coloidal. Grafito coloidal: usado por ciertos relojeros para engrasar los muelles.

COLOIDE m. Materia mineral u orgánica formada de partículas microscópicas que dan soluciones de consistencia gelatinosa: el caucho, la gutapercha, la gelatina, etc., son coloides. Las aplicaciones de los coloides son numerosas: la galalita, que imita el cuerno y la concha, las colas, las resinas sintéticas, el linóleo, etc.

NIOBIO m. Sinónimo de colombio, símbolo Nb, densidad 7, punto de fusión 2500° C. Metal de color gris acerado, inatacable por el ácido clorhídrico, el ácido nítrico y el agua regia, pero atacable por el ácido sulfúrico concentrado. El niobio es uno de los constituyentes de ciertas aleaciones para espirales autocompensadoras.

PILAR m. Pieza de forma alargada, de sección variada pero generalmente circular.

Rueda de pilares: en los cronógrafos, es un roquete r llevando de canto 6 dientes o pilares e de forma triangular que regulan el funcionamiento de varias palancas.

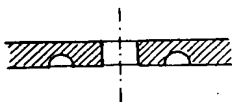
Bloque de pilares: en las herramientas de recortar o troquelar, asiento que lleva dos pilares cilíndricos b; guía la cabeza c, que lleva el punzón.

COLOFONIA f. Residuo seco de la destilación de la trementina; úsase para aumentar la adherencia de las correas en las poleas.

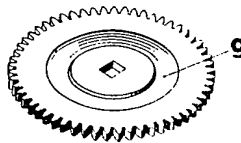
COLORANTE m. Que colora. El óxido de cromo es el colorante del rubí.

COLORACIÓN f. Acción de colorar y su resultado. La temperatura de revenido del acero se aprecia según la coloración de la pieza calentada.

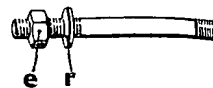
2044



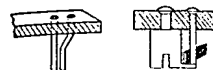
2044 A



2045



2046 A



cordonnet c (bracelet). Les gonds sont quelquefois articulés (fixés à la boîte par une charnière).

Par leur forme et leur décoration ils ont souvent, du point de vue esthétique, plus d'importance que la boîte.

Quelques formes de gonds.

2039 B

2040 GONFLER v. Augmenter de volume. *Un pied de pont trop gros, enfoncé dans un trou, peut faire gonfler ce dernier.*

2041 GONG n. m. Disque de métal qui, lorsqu'on le frappe, donne un son puissant, comparable à celui d'une cloche.

En horlogerie, on appelle gongs des cylindres creux ou pleins, en bronze généralement, encastrés dans un bloc de métal et sur lesquels frappent les marteaux des horloges à sonnerie.

2041 A

Gong circulaire.

2041 B

Gong droit.

Les sons émis par les gongs sont plus puissants, plus amples que ceux émis par les timbres (v. timbre 3889).

2042 GORGE n. f. Entaille circulaire, conique ou arrondie. *La gorge d'une poulie.*

2043 GOUGE n. f. Outil tranchant, creusé en forme de canal, employé par les sculpteurs, les menuisiers, etc., pour creuser, tailler.

2044 GOUGE. En horlogerie, rainure circulaire concave, pratiquée généralement pour réduire les surfaces de frottement ou pour y maintenir de la graisse.

2044 A Les rochets, les couronnes ou d'autres organes visibles ont souvent des gouges polies g dans un but décoratif. *Un rochet à gouge.*

2045 GOUJON n. m. Pièce cylindrique, filetée aux deux extrémités pour recevoir les écrous de serrage. *Assembler, fixer deux pièces avec un goujon.* Goujon avec écrou e et rondelle r. **Goujon.** Cheville métallique ou en bois qui sert à lier deux pièces. Terme peu utilisé par les horlogers qui lui préfèrent *cheville, goupille* ou *clavette*.

2046 GOUPILLE n. f. Petite tige, cylindrique ou légèrement conique, qui sert à fixer, guider, arrêter. *Le spiral est fixé dans la virole par une goupille.*

2046 A Les goupilles de raquette serrent le spiral au point réglant.

Les goupilles de limitation de la course de la fourchette dans l'échappement à ancre. La goupille de renversement, dans un échappement à cylindre, goupille plantée sur la serge du balancier pour éviter le renversement.

2046 B

Goupille fendue ou **clavette**, fil métallique plié en deux parties qu'on introduit dans un trou, à l'extrémité d'un arbre, pour empêcher un écrou de se dévisser.

Befestigung der Kordel c (Armband). Die Anschlüsse sind manchmal beweglich (mit einem Scharnier am Gehäuse befestigt). Durch ihre Form und Verzierungen sind sie in ästhetischer Hinsicht oft wichtiger als das Gehäuse.

Einige Formen von Bandanschlüssen.

AUFTREIBEN v. Sein Volumen vergrößern. *Ein in ein Loch eingedrückter, zu grosser Brückenfuß kann das Loch aufreiben.*

GONG n. Metallscheibe, die beim Anschlagen einen glockenähnlichen, machtvollen Ton erzeugt. In der Uhrmacherei bezeichnet man hohle oder massive Zylinder aus Bronze als Gongs. In einem Metallblock eingesetzt, werden sie von den Hämmern der Schlagwerke geschlagen.

Kreisförmiger Gong.

Stabgong.

Die durch die Gongs abgegebenen Töne sind bedeutend kräftiger und voller als jene der Glocken (s. Glöcke 3889).

(HOHL)KEHLE f. Kreisförmiger, konischer oder gerundeter Einschnitt. *Die Kehlen einer Riemscheibe.*

HOHLBEITEL, HOHLMEISSEL m. Von Bildhauern, Tischlern usw. zum Aushöhlen, Schnitzen verwendetes hohlgeschliffenes Schneidwerkzeug.

RILLE f. In der Uhrmacherei kreisförmige, konkave Eindrehung zur Verkleinerung der reibenden Flächen oder zum Halten des Schmiermittels.

Sperräder, Kronräder oder andere sichtbare Organe weisen als Verzierungen häufig polierte Rillen g auf. *Ein Sperrad mit Rille.*

(SCHRAUBEN)BOLZEN m. Zylindrische Welle mit beidseitigem Gewinde zur Aufnahme der Spannmutter. *Zwei Teile mit einem Bolzen festmachen.* Bolzen mit Mutter e und Unterlagsscheibe r.

Stift, Steckstift: aus Metall oder Holz zum Verbinden von zwei Teilen. Man sagt auch *Bolzen, Dübel*.

SPERRSTIFT m. Kleine, zylindrische oder leicht konische Welle zum Befestigen, Führen, Feststellen. *Die Spiralfeder wird mit einem Sperrstift in der Spiralfeder befestigt.*

Die Rückerstifte führen die Spirale am Zählpunkt in der Ankerhemmung.

Die Begrenzungsstifte des Weges der Ankerzabel in der Ankerhemmung.

Prellstift einer Zylinderhemmung: Stifchen am Unruhreifen, welches das Ueberschwingen verhindert.

Splint, Spaltkeil m.: Zusammengebogener Metalldraht der in ein Loch am Ende einer Welle eingeführt wird, um das Lösen der Mutter zu verhindern.

are sometimes joined. On account of this they are often more than the case itself.

2039 B A few types of case.

2040 DISTEND v. To increase. *is too large, it may be driven.*

2041 GONG n. Metal disk produces a powerful sound that of a bell.

Clockmakers use hollow or solid cylinders, or blocks and struck in clocks.

2041 A Circular gong.

2041 B Straight gong.

The sounds produced are more powerful than (v. bell 3889).

2042 GROOVE n. Tapered. *The groove of a pulley.*

2043 GOUGE n. Sharp tool hollow, used by carving and hollow.

2044 SINK n. In watchmaking, usually circular groove, usually on friction-surfaces or

2044 A Ratchet-wheels, visible parts often Ratchet-wheel with

2045 STUD-BOLT n. Cylindrical pin each end to take cl. two parts with a stud and washer r.

Dowel, dowel-pin joining two parts. by watchmakers, w

2046 PIN n. Small cylindrical used for fixing, e balance-spring is set

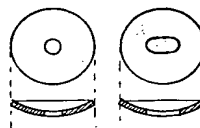
2046 A The curb-pins or balance-spring at the

The banking-pins the movement of the

The banking-pin is a pin fixed to the prevent overbanking

2046 B Split pin or cotter arms and inserted in shaft to prevent a

2050 A



se introduce en un agujero, en el extremo de un árbol, para evitar que se desatornille la tuerca

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